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25X1

FY-65 Quarterly Report, No. 4

PAR 202

PAR 224

28 May 65

SUBJECT: PAR 202, Briefing Print Enlarger, and
PAR 224, 3X - 15X Fluid Gate Enlarger

TASK/PROBLEM

1. PAR 202: To design and build a prototype enlarger for exposing high quality briefing prints in formats up to and including 20 x 24 inches in size. Magnification to be in the 10 - 60 diameter range. The enlarger will be able to produce both black-and-white and color prints. Change from one capability to the other should be made with a minimum of effort.

2. PAR 224: Develop and fabricate an enlarger having continuously variable magnification from 3 to 15X for 70mm negative gate size. Print sizes to range 40 x 40 inches on cut sheet stock.

DISCUSSION

3. To provide engineering data, effort has continued on design sketches and fabrication of the breadboard system. The design of breadboard hardware is complete except for a few items that have been judged best handled during breadboard fabrication. The activity has been:

a. Main Frame: The optical frame has been delivered by the subcontractor and has been assembled on its vibration isolation system to the lower frame.

b. Vacuum Platen and Carriage: Assembly work has progressed to the point where the vacuum platen and carriage are mounted on their tracks. These tracks have been optically aligned to provide straight-line motion of the platen relative to the optical axis of the enlarger.

c. Objective Lenses: Fabrication of the mounts for the seven lens formula samples is complete. Glass elements are complete and assembly

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and adjustment operations are underway. Delivery of the first PAR 224 sample, 7.2" (5X to 9X) lens, is scheduled for 1 June 65. The 4.7" (8.5X to 15X) lens for PARs 202 and 224 is scheduled for 8 June 65; the others are to follow within a period of a month.

d. Objective Focus Assemblies:

(1) Design effort is complete and fabrication has started. In the interest of cost saving for the breadboard system, only two of the "tensioned-thread" focus assemblies are being built for breadboard tests. One assembly will be used for PAR 224:

- (a) 10.7" (3X to 5X) and
- (b) 7.2" (5X to 9X) lenses.

The other assembly will be used for PAR 202 two 1.25" (38X to 62X) lenses.

(2) A "general purpose" focus assembly for both PARs, controlled by a one-inch micrometer spindle, is being built to test the following:

- (a) 4.7" (8.5X to 15X),
- (b) 3.0" (14.5X to 24.7X), and
- (c) 1.9" (24.2X to 40.2X) lenses.

The design of this "general purpose" assembly is complete and has been released for fabrication. Completion of all three assemblies is expected by the third week in August.

e. Lamphouse and Gate Assembly: The design of this assembly is complete and has been released for fabrication.

f. Negative Transport Model: Fabrication of the "non-steering" slotted roller is complete, and it has been preliminarily tested. The results are promising, and experience in the final breadboard installation is awaited before final conclusions will be reached.

g. Enlarger Control System: The circuit design has been completed. All components have been received and are mechanically mounted on their respective chassis. Control console wiring is 90% complete.

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PLANNED ACTIVITY

3. In the next quarter, it is expected that:
 - a. All sample objective lenses will be received.
 - b. Two objective focus assemblies and one "general purpose" focus assembly will be received and final installation and assembly operations will progress to the point where optical testing may be started.
 - c. The lamphouse and gate assembly will be assembled to the bread-board.
 - d. The enlarger control system will be completed and in test-operation.

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